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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,130	03/31/2004	Kenneth Dale Jones	TI-37889	3728

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EXAMINER	
TANG, KENNETH	
ART UNIT	**PAPER NUMBER**
2195	

NOTIFICATION DATE	DELIVERY MODE
12/01/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

Office Action Summary	Application No.	Applicant(s)	
	10/813,130	JONES, KENNETH DALE	
	Examiner	Art Unit	
	KENNETH TANG	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-15 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. In claim 1, for example, the omitted elements are: an essential element that is omitted in the claims is what the instance is an instance of.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear if there is a connection or a relationship between the multi-tasking system (in the preamble) and the multi-instance software system (in the body of the claims). No connection is made between the two and it is unclear what the instance is an instance of.

4. Claim 8 recites the limitation "said channel" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fallon et al. (hereinafter Fallon) (US 6,597,812 B1) in view of Sudo (US 5,692,192).

6. As to claim 1, Fallon teaches a method for reducing context memory requirements in a system (Abstract), comprising:

providing a hardware engine in a computer processor (col. 4, lines 47-50), applying a compression algorithm in said hardware engine to reduce context memory in said software system (lossless data compression used to reduce the amount of data required to process) (col. 3, lines 5-11, col. 1, lines 50-57).

7. Fallon is silent in applying its lossless data compression algorithm such that it relates to each instance in a multi-instance software system. However, Sudo teaches compressing software instances such as tasks (Abstract, col. 5, lines 40-61, col. 6, lines 1-15, col. 7, lines 34-53). Fallon and Sudo are analogous art because they are both in the same field of endeavor of data compression of conserving memory and reducing the amount of data required for processing. One of ordinary skill in the art would have known to modify Fallon's data compression system such that the data being compressed would be tasks, as taught in Sudo. The suggestion/motivation for doing so would have been to provide the predicted result of being able to improve and control the degree of load distribution, improving the speed of message transferring, and thus improving overall processing capabilities (col. 5, lines 50-58, col. 6, lines

13-15, col. 7, lines 40-44). Therefore, it would have been obvious to one of ordinary skill in the art to combine Fallon and Sudo to obtain the invention of claim 1.

8. As to claim 2, Fallon teaches wherein said applying comprises applying a generic, lossless compression algorithm that performs an adaptive packing operation (col. 14, lines 32-41, col. Col. 7, lines 44-46).

9. As to claim 6, Fallon teaches wherein said applying comprises encoding each word in a packed block using a lossless compression hardware engine integrated into said processor (col. 14, lines 32-41, col. 4, lines 47-50, col. 3, lines 5-11).

10. Claims 3-5 and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fallon et al. (hereinafter Fallon) (US 6,597,812 B1) in view of Sudo (US 5,692,192), and further in view of Cocke et al. (hereinafter Cocke) (US 3,717,851).

11. As to claim 3, it is rejected for similar reasons as stated in the rejection of claim 1. However, Fallon in view of Sudo is silent in providing a prefix header at the beginning of each packed block to represent a change in packing width from said packed block from a packing

width of a previous packed block. However, Cocke teaches processing of compacted/compressed data and Cocke teaches that it is well known in the art to use variable-length prefixes and to encode/decode the remaining bits (col. 1, lines 4-57, col. 2, lines 18, Abstract). Fallon, Sudo, and Cocke are all analogous art because they are in the same field of endeavor of data compression and solving the same problem of reducing memory sizes and improving the speed of data transmitted by taking advantage of the compression. One of ordinary skill in the art would have known to modify Fallon in view of Sudo's compression system such that it would include the feature of variable-length prefixes, as taught in Cocke. The suggestion/motivation for doing so would have been to economize the transmission time and storage facilities (col. 1, lines 14-18, col. 1, lines 49-57). Therefore, it would have been obvious to one of ordinary skill in the art to combine Fallon, Sudo, and Cocke to obtain the invention of claim 3.

12. As to claim 4, Fallon and Sudo are silent in teaching wherein said dividing comprises dividing blocks containing the same number of words. However, one of ordinary skill in the art would have known to have Fallon in view of Sudo's blocks divided such that it would contain the same number of words in order to improve simplicity and organization.

13. As to claim 5, Cocke teaches the prefix header as a variable length sequence that uses between one to seven bits (col. 1, lines 4-57, col. 2, lines 18, col. 4, lines 15-67 and col. 5, lines 1-40).

14. As to claim 7, Cocke teaches wherein said encoding comprises performing an adaptive packing operation on said least significant bits (col. 1, lines 4-57, col. 2, lines 18, Abstract).

15. As to claim 8, it is rejected for similar reasons as stated in the rejection of claim 3. In addition, it would be obvious to one of ordinary skill in the art to move data into local or main memory before being processed because all process have to be stored on main memory before they can be executed. When processes don't need to be executed, they do not have to be stored on main memory and can be stored somewhere else. Therefore, it would have been obvious to one of ordinary skill in the art to move data into local or main memory before being processed because all process have to be stored on main memory before they can be executed so that the system could execute properly.

16. As to claim 9, Cocke teaches further comprising: providing a last block prefix header to a final block of said data, wherein said last block prefix header comprises a last block marker of six bits followed by two bits that define the number of said words contained in the final block (col. 1, lines 4-57, col. 2, lines 18, col. 4, lines 15-67 and col. 5, lines 1-40).

17. As to claim 10, it is rejected for similar reasons as stated in the rejection of claim 1. In addition, Fallon in view of Sudo is silent in providing a prefix header at the beginning of each

packed block to represent a change in packing width from said packed block from a packing width of a previous packed block. However, Cocke teaches processing of compacted/compressed data and Cocke teaches that it is well known in the art to use variable-length prefixes to achieve data compaction (col. 1, lines 4-57, col. 2, lines 18, Abstract). Fallon, Sudo, and Cocke are all analogous art because they are in the same field of endeavor of data compression and solving the same problem of reducing memory sizes and improving the speed of data transmitted by taking advantage of the compression. One of ordinary skill in the art would have known to modify Fallon in view of Sudo's compression system such that it would include the feature of variable-length prefixes, as taught in Cocke. The suggestion/motivation for doing so would have been to economize the transmission time and storage facilities (col. 1, lines 14-18, col. 1, lines 49-57). Therefore, it would have been obvious to one of ordinary skill in the art to combine Fallon, Sudo, and Cocke to obtain the invention of claim 10.

18. As to claim 11, it is rejected for the same reasons as stated in the rejection of claim 4.

19. As to claim 12, Cocke teaches further comprising for each said task: determining a word in a block having a maximum number of significant bits; assigning a packing width to said block of said maximum number of significant bits; encoding, with said compression algorithm, least significant bits of each word in said block into a packed block of said packing width multiplied by a total number of words in said block (col. 1, lines 4-57, col. 2, lines 18, Abstract).

20. As to claim 13, Fallon teaches wherein said compression algorithm is lossless compression algorithm (col. 14, lines 32-41, col. 4, lines 47-50, col. 3, lines 5-11).

21. As to claim 14, it is rejected for the same reasons as stated in the rejection of claim 8.

22. As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 9.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **Theogarajan et al. (US 6,308,257 B1)** discloses a system that generates boundary markers (prefix headers) that are length-changing prefixes for variable-length instructions (Abstract, col. 1, lines 53-67, col. 2, lines 1-9).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH TANG whose telephone number is (571)272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

/Kenneth Tang/
Examiner, Art Unit 2195